

REMARKS

This paper is being provided in response to the Office Action dated September 13, 2006 2006, for the above-referenced application. In this response, Applicants have cancelled claims 3 and 20-24 (claims 8 - 19 having been previously cancelled) without prejudice or disclaimer of the subject matter thereof and amended claims 1, 4, 6, 7, 27 and 28 and added new claims 32-34 to clarify that which Applicants consider to be the invention. Applicants respectfully submit that the amendments to the claims and the new claims are fully supported by the originally-filed specification.

Applicants thank the Examiner for the indication of allowable subject matter in claims 3-7, 22-26 and 28-30. Applicants have rewritten claims 6, 7, 25, 26 and 28 into independent form to incorporate the features of the base claim and any intervening claims, and have cancelled claim 3 and incorporated the subject matter thereof into independent claim 1. Accordingly, Applicants submit that these claims, and the claims depending therefrom, are in condition for allowance. Further, as discussed below, Applicants have incorporated into independent claim 27, certain subject matter from the claims held as allowable by the Examiner. Moreover, Applicants note that although claim 31 stands rejected over Matsuki in the Office Action, claim 31 depends from allowable claim 30 and, accordingly, should itself be allowable.

The rejections of claims 1, 2, 20, 21, 27 and 31 under 35 U.S.C. 103(a) as being unpatentable over US Patent App. Pub. No. 2002/0121709 to Matsuki, et al. (hereinafter "Matsuki") is hereby traversed and reconsideration is respectfully requested in view of the amendments to the claims contained herein. As noted above, the inclusion of claim 31 in this

rejection appears to be in error. Further, Applicants have cancelled herein claims 20 and 21. Moreover, as noted above, Applicants have incorporated the subject matter of allowable claim 3 into the base independent claim 1. Accordingly, this rejection is relevant only to claim 27 and possibly new claims depending therefrom.

Independent claim 27, as amended herein, recites a semiconductor device that includes an interconnect layer provided over a semiconductor substrate, an electrically conductive anti-oxidizing layer formed over, and in contact with, a part of the interconnect layer and containing a same element as an element in the interconnect layer that is chemically bonded or alloyed with a different element which is different from the element contained in the interconnect layer, and wherein said different element of said anti-oxidizing layer is a metal having a lower oxidation-reduction potential than that of said element contained in said interconnect layer. A bonding pad metal film is provided over the electrically conductive anti-oxidizing layer to form an electrical conduction with the interconnect layer. Claims 32-34 depend directly or indirectly on independent claim 27.

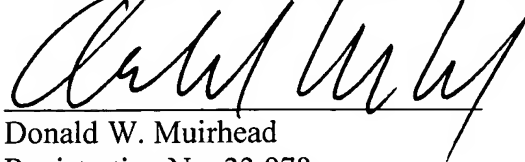
The Matsuki reference discloses an external connection terminal and semiconductor device. The Office Action cites to an interconnect layer 3, a protective film 18a, an electrode pad 18b and an anti-oxidizing layer 18 (see, for example, FIG. 10B of Matsuki). The Office Action states that the anti-oxidizing layer 18 contains copper (Cu) which is a same element as an element in the interconnect layer and that is bonded with phosphorous (P).

Applicants' independent claim 27 has been amended herein to incorporate certain subject matter from the claims held as allowable. Specifically, Applicants recite a semiconductor device having an interconnect layer and an anti-oxidizing layer formed over, in a contact with, a part of the interconnect layer and containing a same element as in the interconnect layer bonded or alloyed with different element from the interconnect layer that is a metal having a lower oxidation-reduction potential than the element in the interconnect layer. The oxidation of the interconnect metal is effectively inhibited by the action and configuration of the anti-oxidizing layer, even when a part of the interconnect layer is exposed by the contact of the probe. In particular, the anti-oxidizing layer configured as recited and including a same element as is in the interconnect layer that is chemically bonded or alloyed with a different element from the interconnect layer more surely inhibits the undesired corrosion because the different element is a metal having a lower oxidation-reduction potential than the element in the interconnect layer. (See page 10, lines 4-11 and page 13, lines 10-24 of the present application.)

Applicants respectfully submit that Matsuki does not teach or fairly suggest at least the above-noted features, as claimed by Applicants. Specifically, Matsuki does not disclose that an anti-oxidizing layer is formed over and in contact with the interconnect layer and contains a same element as an element in the interconnect layer that is chemically bonded or alloyed with a different element from the element in the interconnect layer, wherein the different element is a metal having a lower oxidation-reduction potential than that of the element contained in the interconnect layer. Accordingly, Applicants respectfully request that the rejection be reconsidered and withdrawn.

Based on the above, Applicants respectfully request that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 508-898-8603.

Respectfully submitted,
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